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09/881,300	06/13/2001	Rodrick Seely	KLR:djs 3301.038	6773

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EXAMINER

LI, SHI K

ART UNIT	PAPER NUMBER
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2633

DATE MAILED: 03/20/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No. 09/881,300	Applicant(s) SEELY ET AL.	
	Examiner Shi K. Li	Art Unit 2633	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 17 January 2006.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-7,9-22,24-37,39-53,55-60 and 62-73 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-7,9-22,24-37,39-53,55-60 and 62-73 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Claim Objections

1. Claim 1 is objected to because of the following informalities: "said provide electrical power" in line 9 of the claim should read "provide said electrical power". Appropriate correction is required.
2. Claim 16 is objected to because of the following informalities: "said provides electrical power" in lines 8-9 of the claim should read "provides said electrical power". Appropriate correction is required.
3. Claim 26 is objected to because of the following informalities: "odulated" in line 1 of the claim should be "modulated". Appropriate correction is required.
4. Claim 30 is objected to because of the following informalities: "said provide electrical power" in line 8 of the claim should read "provide said electrical power". Appropriate correction is required.
5. Claim 46 is objected to because of the following informalities: "said provide electrical power" in line 8 of the claim should read "provide said electrical power". Appropriate correction is required.

Claim Rejections - 35 USC § 112

6. The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.
7. Claims 1-7, 9-22, 24-37, 39-53, 55-60, 62-73 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains

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subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention.

Claim 1 recites the limitation "wherein said transmitter is free from being maintained in a pilot relay housing surrounding said transmitter, wherein said pilot relay housing is fixed to said enclosure" in lines 13-16 of the claim. The specification as originally filed does not teach a transmitter that is free of housing. The specification as originally filed does not teach any relationship between an optical transmitter and a pilot relay housing. The specification as originally filed does not teach any relationship between an optical transmitter and a pilot relay housing that is fixed to an electrical device enclosure. Therefore, the added limitation is considered as new subject matter.

Claims 16, 30 and 46 recite similar limitations and these added limitations are considered as new subject matter.

Claim Rejections - 35 USC § 103

8. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

9. Claims 1-5, 7, 9-11, 16-20, 22, 24-26, 30-35, 37, 39-41, 46-51, 53, 55-57 and 66-71 are rejected under 35 U.S.C. 103(a) as being unpatentable over Admission (admitted prior art) in view of Hoadley (U.S. Patent 3,493,760).

Regarding claims 1, 16, 30-31 and 46-47, FIG. 1 (prior art) of instant specification discloses a system for controlling a remotely located motor comprising an enclosure including a contactor that selectively provides electrical power to a motor wherein said motor is exterior to said enclosure and wherein said electrical power is 120/240 volts. The difference between admission and the claimed invention is that admission uses an electrical coupling method between a controlling device and a controlled device while the claimed invention uses an optical coupling method between a controlling device and a controlled device. Hoadley teaches in col. 1, lines 50-60 that it is desirable to use an optical coupling method to replace an electrical coupling method to prevent spurious currents from entering the enclosure when the enclosure includes sensitive devices. One of ordinary skill in the art would have been motivated to combine the teaching of Hoadley with admission to use an optical coupling method, which includes an optical transmitter and an optical receiver, such as devices 17 and 16 of FIG. 1 of Hoadley, for controlling the contactor because optical coupling method prevents spurious currents from entering the enclosure to interfere with sensitive devices inside the enclosure. Thus it would have been obvious to one of ordinary skill in the art at the time the invention was made to replace electrical coupling method with optical coupling method, as taught by Hoadley, in the FIG. 1 (prior art) of instant specification because optical coupling method prevents spurious currents from entering the enclosure to interfere with sensitive devices inside the enclosure. Since the modified apparatus of admission and Hoadley does not use pilot relay, there is no pilot relay housing or the pilot relay housing in FIG. 1 (prior art) of instant specification is replaced with a light source housing as shown in FIG. 1 of Hoadley.

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Regarding claims 2, 17, 32 and 48, Hoadley teaches in FIG. 1 that transmitter 17 is outside an enclosure of the controlled device.

Regarding claims 3, 18, 33 and 49, Hoadley teaches in FIG. 1 that receiver 16 is located within said enclosure.

Regarding claims 4, 19, 34 and 50, it is well known in the art that a light source such as a LED operates with low voltage less than 24 volts.

Regarding claims 5, 20, 35 and 51, admission teaches that the contactor is driven with 120 volts.

Regarding claims 7, 22, 37 and 53, the transmitter and receiver of Hoadley do not include any mechanical switching mechanism.

Regarding claims 9, 24, 39 and 55, Hoadley teaches in FIG. 1 that the transmitter is located immediately adjacent to the enclosure such that it prevent the receiver from receiving any additional light from a source other than said transmitter.

Regarding claims 10, 25, 40 and 56, Hoadley teaches in col. 2, line 13 that the light source is a Gallium Arsenide, which inherently emits infrared light.

Regarding claims 11, 26, 41 and 57, Hoadley teaches in FIG. 1 modulated optical signal.

Regarding claims 66-71, Hoadley teaches in FIG. 1 that the transmitter and receiver are proximate to said enclosure.

10. Claims 6, 21, 36 and 52 are rejected under 35 U.S.C. 103(a) as being unpatentable over admission and Hoadley as applied to claims 1-5, 7, 9-11, 16-20, 22, 24-26, 30-35, 37, 39-41, 46-51, 53, 55-57 and 66-71 above, and further in view of Crochet et al. (U.S. Patent 4,249,264).

Admission and Hoadley have been discussed above in regard to claims 1-5, 7, 9-11, 16-20, 22, 24-26, 30-35, 37, 39-41, 46-51, 53, 55-57 and 66-71. The difference between admission and Hoadley and the claimed invention is that admission and Hoadley do not teach to use 24 volts for the first signal. Crochet et al. teaches in the FIG. and col. 3, lines 54-55 to use a voltage of 24 volts for driving a transmitter D1. The transmitting circuit of Crochet et al. and the modulated light source 17 of Hoadley provide similar functions and are equivalent. Where the claimed differences involve the substitution of interchangeable or equivalents and the reason for the selection of one equivalent for another was not to solve an existent problem, such substitution has been judicially determined to have been obvious. See *In re Ruff*, 118, USPQ 343 (CCPA 1958). Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to replace the modulated light source with the transmitter of Crochet et al. in the modified controlling system of admission and Hoadley.

11. Claims 12-14, 27-29, 42-44 and 58-60 are rejected under 35 U.S.C. 103(a) as being unpatentable over admission and Hoadley as applied to claims 1-5, 7, 9-11, 16-20, 22, 24-26, 30-35, 37, 39-41, 46-51, 53, 55-57 and 66-71 above, and further in view of Atobe et al. (U.S. Patent 5,051,601).

Admission and Hoadley have been discussed above in regard to claims 1-5, 7, 9-11, 16-20, 22, 24-26, 30-35, 37, 39-41, 46-51, 53, 55-57 and 66-71. Regarding claims 12-13, 27-28, 42-43 and 58-59, the difference between admission and Hoadley and the claimed invention is that admission and Hoadley do not teach a plurality of receivers. Atobe et al. teaches in FIG. 2 that a transmitter can transmit light to a plurality of receivers 55 and 56 for controlling different devices. One of ordinary skill in the art would have been motivated to combine the teaching of

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Atobe et al. with the modified control system of admission and Hoadley because controlling several devices with a single transmitter reduce space and cost. Thus it would have been obvious to one of ordinary skill in the art at the time the invention was made to use a single transmitter to control a plurality of devices, as taught by Atobe et al., in the modified control system of admission and Hoadley because controlling several devices with a single transmitter reduce space and cost.

Regarding claims 14, 29, 44 and 60, Atobe et al. teaches in FIG. 3 that a code is used to determine the intended electrical device of a signal.

12. Claims 15, 45 and 72-73 are rejected under 35 U.S.C. 103(a) as being unpatentable over admission and Hoadley as applied to claims 1-5, 7, 9-11, 16-20, 22, 24-26, 30-35, 37, 39-41, 46-51, 53, 55-57 and 66-71 above, and further in view of Pitsch et al. (U.S. Patent 6,384,946 B1).

Admission and Hoadley have been discussed above in regard to claims 1-5, 7, 9-11, 16-20, 22, 24-26, 30-35, 37, 39-41, 46-51, 53, 55-57 and 66-71. The difference between admission and Hoadley and the claimed invention is that admission and Hoadley do not teach a connection between the receiver and the first device without using a wire. However, electrical connection by contact is well known in the art. For example, Pitsch et al. teaches in FIG. 1 to use a plug P1 and jack J1 to connect an IR receiver to an electrical circuit. One of ordinary skill in the art would have been motivated to combine the teaching of Pitsch et al. with the modified system of admission and Hoadley because the arrangement of Pitsch et al. allows easy replacement of the IR receiver in case the receiver is bad or of upgrading the receiver to another kind of transducer. Thus it would have been obvious to one of ordinary skill in the art at the time the invention was made to connect the receiver with the first device using a plug-jack pair, as taught by Pitsch et

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al., in the modified controlling system of admission and Hoadley because the arrangement of Pitsch et al. allows easy replacement of the receiver.

Regarding claims 72-73, Hoadley teaches in FIG. 1 that the transmitter and receiver are proximate to said enclosure.

13. Claim 62 is rejected under 35 U.S.C. 103(a) as being unpatentable over admission, Hoadley and Pitsch et al. as applied to claims 15, 45 and 72-73 above, and further in view of Sembhi et al. (U.S. Patent 6,380,696 B1).

Admission, Hoadley and Pitsch et al. have been discussed above in regard to claims 15, 45 and 72-73. The difference between admission, Hoadley and Pitsch et al. and the claimed invention is that admission, Hoadley and Pitsch et al. do not teach the details of the receiver. Sembhi et al. teaches in FIG. 9 a receiver 800 for controlling a load. One of ordinary skill in the art would have been motivated to combine the teaching of Sembhi et al. with the modified control system of admission, Hoadley and Pitsch et al. because the use of thyristor 822 for controlling a load provides fast response without generating any spurious currents. Thus it would have been obvious to one of ordinary skill in the art at the time the invention was made to use a receiver circuit with a load conductor and a line (hot) conductor, as taught by Sembhi et al., in the modified control system of admission, Hoadley and Pitsch et al. because the use of thyristor 822 for controlling a load provides fast response without generating any spurious currents.

14. Claims 63-65 is rejected under 35 U.S.C. 103(a) as being unpatentable over admission and Hoadley as applied to claims 1-5, 7, 9-11, 16-20, 22, 24-26, 30-35, 37, 39-41, 46-51, 53, 55-57 and 66-71 above, and further in view of Sembhi et al. (U.S. Patent 6,380,696 B1).

Admission and Hoadley have been discussed above in regard to claims 1-5, 7, 9-11, 16-20, 22, 24-26, 30-35, 37, 39-41, 46-51, 53, 55-57 and 66-71. The difference between admission and Hoadley and the claimed invention is that admission and Hoadley do not teach the details of the receiver. Sembhi et al. teaches in FIG. 9 a receiver 800 for controlling a load. One of ordinary skill in the art would have been motivated to combine the teaching of Sembhi et al. with the modified control system of admission and Hoadley because the use of thyristor 822 for controlling a load provides fast response without generating any spurious currents. Thus it would have been obvious to one of ordinary skill in the art at the time the invention was made to use a receiver circuit with a load conductor and a line (hot) conductor, as taught by Sembhi et al., in the modified control system of admission and Hoadley because the use of thyristor 822 for controlling a load provides fast response without generating any spurious currents.

Response to Arguments

15. Applicant's arguments filed 17 January 2006 have been fully considered but they are not persuasive.

The Applicant argues that the combinations of the teachings of the admitted prior art with Hoadley would result in the pilot relay of the admitted prior art being replaced with optical coupling structure. The resulting structure would result in the optical coupling structure being enclosed within the pilot relay housing of the admitted prior art. The Applicant submits that there would be no motivation to remove the pilot relay housing because neither reference recognizes any benefit that may result nor that such an arrangement would permit such removal, while being compliant with the electrical code requirements. The Examiner disagrees. By definition, a housing that houses a pilot relay or a housing for a pilot relay is called a pilot relay

housing. Considering the prior art as a whole, one of ordinary skill in the art would have replaced the pilot relay with an optical transmitter and at the same time would have replaced the pilot relay housing with a suitable housing for an optical transmitter such as the housing disclosed in FIG. 1 of Hoadley for modulated light source 17. For example, if an optical transmitter is much bigger than a pilot relay or having a shape different from a pilot relay, an optical transmitter may not fit into a pilot relay housing. On the other hand, if an optical transmitter is smaller than a pilot relay, a smaller housing can be used for reducing the size of the system.

Conclusion

16. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Shi K. Li whose telephone number is 571 272-3031. The examiner can normally be reached on Monday-Friday (8:30 a.m. - 5:00 p.m.).

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If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jason Chan can be reached on 571 272-3022. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

skl

14 March 2006



Shi K. Li
Patent Examiner